Moving Dental Materials from Laboratory to Clinic

Proceedings of the International Dental Materials Congress 2011

Eun-Myung Auditorium
Yonsei University Severance Hospital
Seoul, Korea
May 27-29, 2011
Proceedings of the International Dental Materials Congress 2011

Moving Dental Matrials
from Laboratory to Clinic

In conjunction with

2011 Annual Meeting of
The Korea Research Society
for Dental Materials

57th Meeting of
The Japanese Society for
Dental Materials and Devices

Eun-Myung Auditorium,
Yonsei University Severance Hospital

Seoul, Korea
May 27–29, 2011
# TABLE OF CONTENTS

Welcome Messages from the IDMC 2011 ................................................................. 1  
Note from Proceedings Editors ........................................................................... 4  
Organizing Committee of IDMC 2011 .................................................................. 5  
Contributors ........................................................................................................ 7  
Meeting Schedule ................................................................................................ 9  

**General Session Program**  
Oral Presentations ................................................................................................. 11  
Poster Presentation Competition ......................................................................... 15  
Poster Presentation ............................................................................................... 17  

**Invited Lecture I: New Concept of Implant Design and Characteristics**  
“Recent Changes of Dental Implant Design - AnyRidge”  
  Kwang Bum Park (MegaGen Implant Co., Ltd., Korea) .................................. 39  
“Implant Surface Treatment”  
  Takao Hanawa (Tokyo Medical and Dental University, Japan) ............... 46  
“Bone Graft Materials”  
  Jonathan C Knowles (University College London, United Kingdom) ....... 58  

**Invited Lecture II: Esthetic Restoration Using CAD/CAM Technology**  
“Technical Factors Affecting the Properties of Dental Zirconia”  
  Seiji Ban (Aichi Gakuin University, Japan) ................................................. 69  
"Zirconia: What Consequences with Its Use for Dental Restorations"  
  Michael Swain (The University of Sydney, Australia) .............................. 80  
"Lifetime Prediction of Dental Implants and Prostheses "  
  Jason A Griggs (University of Mississippi, U.S.A.) .................................. 92  
"New Concept of Soft Tissue Management in Anterior Immediate Implants"  
  Hoi Wung Chung (Jeonju Mir Dental Hospital, Korea) ........................... 102
Abstracts

Oral Presentation ...................................................................................................... 115
Poster Presentation Competition ............................................................................ 155
Poster Presentation ................................................................................................... 173

Appendix

Index to Authors/Co-authors ............................................................................................. 385
Map of Conference Site ........................................................................................................ 396
Meeting Schedule

Friday, May 27

4:00 pm – 8:00 pm Registration
6:00 pm – 8:00 pm Welcome Reception (Allen Hall)

Saturday, May 28

08:00 am – 05:00 pm Registration
08:50 am – 09:00 am Opening Remarks (Eun-Myung Auditorium)
09:00 am – 11:00 am Invited Lecture I (Eun-Myung Auditorium)
   “New Concept of Implant Design and Characteristics”
   Coordinator: Kyo-Han Kim (Kyungpook National University, Korea)
   Satoshi Imazato (Osaka University, Japan)
   09:00 am – 09:40 am  “Recent Changes of Dental Implant Design - AnyRidge”
   Speaker: Kwang Bum Park (MegaGen Implant Co., Ltd., Korea)
   09:40 am – 10:20 am  “Implant Surface Treatment”
   Speaker: Takao Hanawa (Tokyo Medical and Dental University, Japan)
   10:20 am – 11:00 am  “Bone Graft Materials”
   Speaker: Jonathan C Knowles (University College London, United Kingdom)
11:00 am – 12:00 pm Poster Presentation I (Seminar Room 2-3)
12:00 am – 01:00 pm Lunch (3rd Floor)
01:00 pm – 04:00 pm Invited Lecture II (Eun-Myung Auditorium)
   "Esthetic Restoration Using CAD/CAM Technology"
   Coordinator: Kunio Ishikawa (Kyusyu University, Japan)
   Min-Ho Lee (Chonbuk National University, Korea)
   01:00 pm – 01:40 pm  “Technical Factors Affecting the Properties of Dental Zirconia”
   Speaker: Seiji Ban (Aichi Gakuin University, Japan)
   01:40 pm – 02:20 pm "Zirconia: What Consequences with Its Use for Dental Restorations "
   Speaker: Michael Swain (The University of Sydney, Australia)
   02:20 pm – 02:40 pm Coffee Break
   Coordinator: Hae-Hyoung Lee (Dankook University, Korea)
   Masao Yoshinari (Tokyo Dental Collage, Japan)
   02:40 pm – 03:20 pm  “Lifetime Prediction of Dental Implants and Prostheses ”
   Speaker: Jason A Griggs (University of Mississippi, U.S.A.)
   03:20 pm – 04:00 pm "New Concept of Soft Tissue Management in Anterior Immediate Implants"
   Speaker: Hoi Wung Chung (Mir Dental Hospital, Korea)
04:00 pm – 05:00 pm Poster Presentation II (Seminar Room 2-3)
04:00 pm – 06:00 pm Poster Presentation Competition (YIA) (Seminar Room 4)
07:00 pm – 10:00 pm Banquet (optional) (boarding time 6:30 pm)

Sunday, May 29

08:00 am – 09:00 am Registration
08:30 am – 10:30 am

Oral Presentation I (Eun-Myung Auditorium)
Coordinator: Isao Hirata (Hiroshima University), Jin-Soo Ahn (Seoul National University), Seung-Han Oh (Wonkwang University), Yoshiya Hashimoto (Osaka Dental University)

Oral Presentation II (Lecture Hall A)
Coordinator: Takuya Matsumoto (Osaka University), Han-Cheol Choe (Chosun University), Hyeong-Cheol Yang (Seoul National Univ.), Takashi Nezu (Iwate Medical University)

Oral Presentation III (Lecture Hall B)
Coordinator: Naoyuki Nomura (Tokyo Medical and Dental Univ.), Yong-Keun Lee (Yonsei Univ.), Hae-Won Kim (Dankook University), Yukimichi Tamaki (Showa University)

10:30 am – 11:30 am Poster Presentation III (Seminar Room 2-3)
Poster Presentation Competition (YIA) (Seminar Room 3: open to the public)

11:30 am – 11:40 am Closing Remarks (Eun-Myung Auditorium)
11:40 am – 12:30 pm Lunch (3rd Floor)
General Session Program

Oral Presentation I (O1–O12): Sunday, May 29, 8:30 am – 10:30 am, Eun-Myung Auditorium

Chair: Isao Hirata (Hiroshima University), Jin-Soo Ahn (Seoul National University), Seung-Han Oh (Wonkwang University), Yoshiya Hashimoto (Osaka Dental University)

O1-Adh01 TEM Characterization of a Silorane Composite Bonded to Enamel/Dentin.
*Mine A1), De Munck J2), Kuboki T1), Yoshida Y1), Suzuki K1), Van Meerbeek B2)
(1Dentistry and Pharmaceutical Science, Graduate School of Medicine, Okayama Univ., Okayama, Japan, 2Catholic University of Leuven, Leuven, Belgium)

O1-Com01 Biopolymer-coated Glass Nanofibers with Bioactivity for Use as Tissue Regenerative Matrices.
*Kim JJ1,2), Won JE1,2), Shin US1,2), Kim HW1,2,3)*
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

O1-Com02 Contraction Stresses in Direct and Indirect Resin Composite Restorations Evaluated by Crack Analysis.
*Yamamoto T1), Nakamura Y2), Nishide A1), Kubota Y1), Momoi Y1)
(1Dept. of Oper. Dent., 2Dept. of Fixed Pros., Tsurumi Univ., Yokohama, Japan)

O1-Com03 Biocompatible-modified Magnetic Nanoparticles for Biomedicine.
*Singh RK1), Eltohamy M1), El-Fiqi AM1,2), Shin US1,2), Kim HW1,2,3)*
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

O1-Com04 Curing Efficiency of Three Different Curing Modes at Different Distances for Four Composites.
*Zhu S1), Platt JA2)
(1JiLin Univ., ChangChun, China, 2Indiana Univ., Indianapolis, USA)

O1-Pol01 The Influence of Film-forming Materials on the Properties of Fluoride Varnish.
*Zhao XY, Li ZH, Wang JQ, Li SB
(The 4th Military Medical Univ., Xi’an 710032, China)

O1-Pol02 Development of 4-META/MMA-based Adhesive Resin with FGF-2 Releasing Property - Influences of Resin Monomers on Functions of FGF-2.
*Takeda K1), Imazato S2), Kiba W1), Ebisu S1)
(1Department of Restorative Dentistry and Endodontology, 2Department of Biomaterial Science, Osaka Univ., Osaka, Japan)

O1-Pol03 Effect of Polymer-based Rotary File in Root Canal Irrigation on Smear Layer Removal: A SEM Study.
*Masudi SM, Thauk M, Ariffin Z, Tin Oo MM
(Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia)

O1-Mis01 Analysis of Strengthening Mechanisms of Human Dentin by UV Irradiation.
*Furuya Y, Hayashi M, Takeda Y, Ebisu S
(Graduate School of Dentistry, Osaka Univ., Suita, Japan)

O1-Mis02 Biomechanics of Viscoelastic Masticatory Mucosa.
*Wakabayashi N1), Ona M1), Takaichi A1), Sawada A2), Suzuki T2), Igarashi Y1)
(1Tokyo Medical and Dental Univ., Tokyo, Japan, 2Iwate Medical Univ., Morioka, Japan)
O1-Mis03  Tooth Whitening, Heat and Cytocompatibility of the Mixture of Self-heating Zeolite and 34.5% Hydrogen Peroxide.
*Lee JM1), Kim KM1,2), Kim MJ1,2), Lee YK1) (1Department and Research Institute of Dental Biomaterials & Bioengineering, 2Research Center for Orofacial Hard tissue Regeneration, College of Dentistry, Yonsei Univ., Seoul, Korea, 3Ivoclar-Vivadent Co., Lichtenstein)

O1-Mis04  Bone-like Tissue Induced by rhBMPs in vitro has Ossification Potential in vivo.
*Hayashi T, Asai T, Asakura M, Sasaki K, Uematsu Y, Mieki A, Kataoka H, Kawai T (Department of Dental Materials Science School of Dentistry, Aichi Gakuin Univ., Nagoya, Japan)

Oral Presentation II (O13 – O25): Sunday, May 29, 8:30 am –10:30 am, Lecture Hall A

Chair: Takuya Matsumoto (Osaka University), Han-Cheol Choe (Chosun University)
Hyeong-Cheol Yang (Seoul National University), Takashi Nezu (Iwate Medical University)

O2-Imp01  Immobilization of Ag Nanoparticles/FGF-2 on Modified Titanium Implant Surface and Behavior of Human Gingival Fibroblasts.
Ma QL, Mei SL, Ji K, *Zhang YM (School of Stomatology, Fourth Military Medical Univ., Xi’an, China)

O2-Imp02  Enhancement of Fibroblast Growth on Microgroove-surfaced Pure Titanium Substratum.
*Furuhashi A, Ayukawa Y, Atsuta I, Okawachi H, Koyano K (Section of Implant and Rehabilitative Dentistry, Division of Oral Rehabilitation, Faculty of Dental Science, Kyushu Univ., Fukuoka, Japan)

O2-Imp03  Application of Carbon Nanotube Coated 3D Scaffold for Bone Tissue Engineering.
*Hirata E, Uo M, Watari F, Yokoyama A (Hokkaido Univ., Sapporo, Japan)

O2-Imp04  In vitro and in vivo Evaluation of Ca-modified Titanium with Ca-ozone Treatment.
*Tsuru K1), Sakaguchi M1), Ayukawa Y1), Moriyama Y1), Maruta M1), Matsuya S3), Koyano K1), Ishikawa K1) (1Kyushu Univ., Fukuoka, Japan, 2Fukuoka Dental College, Fukuoka, Japan)

O2-Imp05  Effects of Granular Size on the Tissue Response to Carbonate Apatite Granules in Rabbit.
*Ishikawa K1), Miyamoto Y2), Fujisawa K2), Nagai H2), Tsuru K1), Maruta M3), Matsuya S3) (1Kyushu Univ., Fukuoka, Japan, 2Tokushima Univ., Tokushima, Japan, 3Fukuoka Dental College, Fukuoka, Japan)

O2-Imp06  Osteoinductive Activity of BMP-Metal Composite Material.
*Kawai T, Hayashi H, Tsuruta S, Taniyama M, Hamajima S, Sato Y, Kobayashi S, Ohno Y, Uematsu Y (School of Dentistry Aichi-gakuin Univ., Nagoya, Japan)

O2-Met01  Unique Hardening Behavior of Dental Ag-Pd-Au-Cu Alloys with Different Cu Contents Through Solution Treatment.
*Kim Y-H1), Niinomi M2), Nakai M2), Fukui H3) (1Graduate Student of Tohoku Univ., Sendai, Japan, 2Institute for Materials Research, Tohoku Univ., Sendai, Japan, 3Aichi-Gakuin Univ., Nagoya, Japan)

O2-Met02  Electrochemical Impedance Spectroscopy Analyses of Titanium Alloys in Peroxide- or Fluoride-containing Solutions.
*Oda Y, Takemoto S, Hattori M, Hasegawa K, Yoshinari M, Kawada E (Tokyo Dental College, Chiba, Japan)
O2-CAD01 Influence of Nb and Fe Additions on Microstructure, Mechanical Properties of Ni-Cr-Mo Alloy for CAD/CAM.
*Kang YH1), Lee SB2), Cho SW2), Park KJ1), Kim GM1), Kim KN1)
(1Yonsei Univ., Seoul, Korea, 2CeragemBiosys, Ilsan, Korea)

O2-Bio01 Bisphosphonate Immobilization to Apatite Coated Titanium Web for Bone Regeneration.
*Hayakawa T1), Ametani A2), Yoshinari M3), Hara H4), Sato M5)
(1Tsurumi Univ., Yokohama, Japan, 2Hilex Corp, Amagasaki, Japan, 3Tokyo Dental College, Chiba, Japan, 4Kogakuin Univ., Tokyo, Japan)

O2-Bio02 Room-temperature Ionic Liquids (RTILs)-assisted Preparation of Polymeric Porous Scaffolds.
*Lee HY1,2), Bang SH1,2), Shin US1,2), Kim HW1,2,3)*
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

O2-Bio03 In vitro Evaluation of Osteoclastic Resorption on Carbonate Apatite Block Derived from Dicalcium Phosphate and Calcium Carbonate.
*Daitou F1), Tsuru K1), Maruta M1), Matsuya S2), Terada Y1), Ishikawa K1)
(1Kyushu Univ., Fukuoka, Japan, 2Fukuoka Dent. College, Fukuoka, Japan)

O2-Bio04 The Cytotoxicity Evaluation of the Polyvinyl Siloxane Impression Materials using the Agar Diffusion Test as a Function of Time.
*Kwon JS1), Lee SB1,2), Kim KM1,2), Kim KN1,2)
(1Research Center for Orofacial Hard Tissue Regeneration, Seoul, Korea, 2Department and Research Institute of Dental Biomaterials and Bioengineering, College of Dentistry, Yonsei Univ., Seoul, Korea)

Oral Presentation III (O26–O37): Sunday, May 29, 8:30 am –10:30 am, Lecture Hall B

Chair: Naoyuki Nomura (Tokyo Medical and Dental Univ.), Yong-Keun Lee (Yonsei University), Hae-Won Kim (Dankook University), Yukimichi Tamaki (Showa University)

O3-Cer01 A Comparison of the Bond Strengths of Layered and Pressed-on Veneering Porcelains to Zirconia.
*Hata U1), Uehara Y2), Sakurai Y2), Wakamatsu N1), Yamamura O1), Fujiwara S1), Doi Y1)
(1Asahi Univ., Gifu, Japan, 2Fine Co. Inc., Osaka, Japan)

O3-Cer02 Calcium Phosphate Hollow Spheres for Hard Tissue Repair.
*Hong MH, Kim KM, Lee YK
(Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei Univ. College of Dentistry, Seoul, Korea)

O3-Cer03 β-Tricalcium Phosphate with Macropores and Micropores.
*Kim SM, Kim KM, Lee YK
(Yonsei Univ., Seoul, Korea)

O3-Cer04 Esthetic Rehabilitation of Bi-arch Anterior Teeth Utilizing Zirconia-based-ceramic Restorations: a Case Report.
*Zhao K, Pan Y
(Sun Yat-sen Univ., Guangzhou, China)

O3-Cer05 Assessment of Osteogenic Responses to Zinc-incorporated Bioactive Glasses.
*Oh SA1,2), Won JE1,2), Kim JH1,2), Shin US1,2), Lee HH1,2), Kim HW1,2,3)*
(1Department of Nanobiomedical Science & WCU Research Center, Korea, 2Institute of Tissue Regeneration Engineering, Korea, 3Dankook Univ., Cheonan, Korea)
O3-Cer06  Self-setting Calcium Phosphate Microspherical Carriers for the Reconstruction of Hard Tissues.  
*Park JH1,2), Lee GS1,2), Shin US1,2,3), Lee HH1,3), Kim HW1,2,3)*  
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science, School of Dentistry, Dankook Univ., Cheonan, Korea)

O3-Cer07  Bonding Strength between Zirconia and Dental Porcelain (Part 4) Interaction of Surface Roughness with Firing Temperature.  
*Tsuruki J1), Noda M1), Okuda Y1), Miyamoto M1), Ban S2)  
(1Kagoshima Univ., Kagoshima, Japan, 2Aichi Gakuin Univ., Nagoya, Japan)

O3-Cer08  Porosity of Dental Gypsum Investments in Setting and Heating Process.  
*Asaoka K  
(Tokushima Univ., Tokushima, Japan)

O3-Cer09  Fabrication of $\beta$TCP Foam using Magnesium Oxide as Stabilizer.  
*Nikaido T1,2), Tsuru K1), Daitou F1), Munar M1), Maruta M1), Matsuya S1), Nakamura S2), Ishikawa K1)  
(1Department of Biomaterials, 2Section of Oral and Maxillofacial Surgery, Kyushu Univ., Fukuoka, Japan, 3Fukuoka Dental College, Fukuoka, Japan)

O3-Cer10  Effect of Surface Treatment on Bonding Strength of Zirconia Ceramics to Resin Cements.  
*Sato H, Yamasaki Y  
(Kagoshima Univ., Kagoshima, Japan )

O3-Cer11  PMMA-ZrO$_2$ Composite with Excellent Machinability Used for Dental CAD/CAM System.  
*Shibao Li, Xinyi Zhao, Yimin Zhao, Lihui Tang, Cheng Xie  
(School of Stomatology, The Fourth Military Medical Univ., Xi’an, China)

O3-Cer12  Dynamic Fatigue Behaviour and Numerical Life of Dental Ceramic Material.  
*Zhao K1), Cheng QT1), Wu WQ1), Zhang XP2)  
(1Department of Prosthodontics, Guanghua School of Stomatology, Sun Yat-sen Univ., Guangzhou, China, 2School of Mechanical Engineering, South China University of Technology, Guangzhou, China)
Poster Presentation Competition (YIA01–YIA15)

**Saturday, May 28, 04:00–06:00 pm, Seminar Room 4: Closed-door Presentation (Recommended)**

**Sunday, May 29, 10:30–11:30 am, Seminar Room 3: open to the public**

**YIA01** Synthesis of Hydroxyapatite Nanocrystals and Their Application as Coating Agents for Biodegradable Polymers.  
*Okada M1), Takeda S1), Furuzono T2)  
(1Osaka Dent. Univ., Osaka, Japan, 2Kinki Univ., Wakayama, Japan)

**YIA02** Calcium Phosphate Nucleation Ability on the Titanium Surface Modification via Alkylphosphonic Acid with Carboxyl Group.  
*Wu Jiang1,2), Hirata Isao1), Zhao Xianghui2), Okazaki Masayuki1)  
(1Hiroshima Univ., Hiroshima, Japan, 2Fourth Military Medical Univ., Xi’an, China)

**YIA03** Cytotoxicity Test using Polyurethane Disc as Dentin-substitutes in a Dentin Barrier Test.  
*Kim MJ1,2), Kim KN1,2), Lee YK1), and Kim KM1,2)  
(1Department & Research Institute of Dental Biomaterials & Bioengineering, 2Research Center for Orofacial Hard Tissue Regeneration, College of Dentistry, Yonsei Univ., Seoul, Korea)

**YIA04** The Effect of N-Acetylcysteine on Cytotoxicity and Anti-differentiation Activity of Dentin Bonding Agents.  
*Son KM, Kim NR, Park HC, Zhu TT, Lim BS, Yang HC  
(Seoul National Univ., Seoul, Korea)

**YIA05** Evaluation of Antibacterial Effects of an Experimental Primer Containing MDPB for Resin-based Root Canal Filling System.  
*Yoshikawa R1), Izu HN1), Imazato H1), Ebisu S1)  
(1Department of Restorative Dentistry and Endodontology, 2Department of Biomaterials Science, Osaka Univ., Suita, Japan)

**YIA06** Effect of Sodium Ascorbate on Bond Strength to Bleached Enamel.  
*Leetrakulwanna C, Vongphan N, Senawongse P  
(Department of Operative Dentistry and Endodontics, Faculty of Dentistry, Mahidol Univ., Bangkok, Thailand)

**YIA07** Nanocomposites Scaffolds Reinforced with Modified Multi-walled Carbon Nanotubes for Hard Tissue Engineering.  
*Biligzaya D1,2), Shin US1,2), Lee HH1,3), Kim HW1,2,3)  
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

**YIA08** Effects on Bone Regeneration When Collagen Model Polypeptides Are Combined with Various Sized Alpha-tricalcium Phosphate Particles.  
*Sakai K1), Hashimoto Y1), Baba S2), Nishiura A1), Matsumoto N1)  
(1Osaka Dent Univ., Osaka, Japan, 2Institute of Biomedical Research & Innovation, Kobe, Japan)

**YIA09** Surface Property and Streptococcal Adherence of Ce-TZP/Al2O3 Nanocomposite.  
*Sawada Tomofumi, Sawada Tomoji, Hamada N, Kumasaka T, Kimoto K  
(Kanagawa Dental College, Yokosuka, Japan)

**YIA10** Mechanical Retention for Low-fusion Porcelain and the Sponge-like Surface of 14K Gold Alloy.  
*Ida Y, Nagano F, Hashimoto M, Ohno H, Endo K  
(Health Sciences University of Hokkaido, Tobetsu, Japan)
YIA11  Mechanical and Biological Performances of Nanocomposite Fibrous Membranes for Guided Bone Regeneration.  
*Park JH (1,2), Jegal SH (1,2), Kim TH (1,2), Kim JH (1,2), Lee HH (1,3), Kim HW (1,2,3)*  
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

YIA12  Dependence of Silane Coupling Agent on Shear Bonding Strength between Titanium Alloy and Segmented Polyurethane after Immersion in Water.  
*Nakai M (1), Niinomi M (1), Kamura H (2), Hanawa T (3)*  
(1Tohoku Univ., Sendai, Japan, 2Graduate Student of Tohoku Univ., Sendai, Japan, 3Tokyo Medical and Dental Univ., Tokyo, Japan)

YIA13  Flexural Properties of a New Face Guard Core Material Measured by Three Point Bending Test.  
*Abe K (1), Churei H (1), Kobayashi M (1), Takahashi H (1), Ueno T (1)*  
(1Tokyo Medical and Dental Univ., Tokyo, Japan, 2Chiba Institute of Technology, Chiba, Japan)

YIA14  Electrical Polarization Characteristics and BSA Binding Capability of Hydrothermally Treated CaTiO₃ Powder.  
*Hong SB (1), Seo YW (2), Jeong SH (2), Kim JW (1), Park YJ (1), Song HJ (1)*  
(1Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea, 2KBSI, Gwang-Ju Center, Gwangju, Korea)

YIA15  Incorporation of Silver Nanoparticles to Chitosan Gel and Evaluation of Its Bactericidal Effect.  
*Carolina Sámano-Valencia, Gabriel Alejandro Martínez-Castañón, Nuria Patiño-Marín, Rita Elizabeth Martínez-Martínez, Juan Pablo Loyola-Rodríguez, Nereyda Niño-Martínez*  
(Advanced Education General Dentistry Program, San Luis Potosí Univ., Mexico)
Poster Presentation I: Saturday, May 28, 11:00 am – 12:00 pm, Seminar Room 2-3

Implant

P1-Imp01 Surface Modification of Titanium Implant by Anodic Oxidation Treatment and Bisphosphate Immobilization.
*Kim WG1), Lee SJ1), Soh YJ1), Lee MH1), Kim HS1), Kim BI2), Bae TS1)
(1Chonbuk National Univ., Jeonju, Korea, 2Sunchon National Univ., Suncheon, Korea)

P1-Imp02 Bioactivity of Precalciﬁed Nanotubular TiO2 Layer on Titanium Implant.
*Yang EJ1), Park IS1), Chung HW1,2), Wataﬁ F3), Uo M3), Lee MH1), Bae TS1)
(1Chonbuk National Univ., Jeonju, Korea, 2Jeonju Mir Dental Hospital, Jeonju, Korea,
3Hokkaido Univ., Sapporo, Japan)

P1-Imp03 Biomechanical Considerations of Different Collar Structured Implants Supporting 3-Unit Fixed Partial Denture.
*Meriç G1), Erkmen E2), Kurt A3)
(1Near East Univ., Nicosia Mersin-10, Turkey, 2Gazi Univ., Ankara, Turkey, 3Atılım Univ.,
Ankara, Turkey)

P1-Imp04 Influence of Prosthesis Type and Material on the Biomechanical Behaviour of Implant Retained Fixed Partial Dentures,
*Meriç G1), Erkmen E2), Kurt A3)
(1Near East Univ., Nicosia Mersin-10, Turkey, 2Gazi Univ., Ankara, Turkey, 3Atılım Univ.,
Ankara, Turkey)

P1-Imp05 Surface Characteristics of Titanium Implant Modiﬁed by Blasting and Acid-etching.
*Lee KJ1), Park IS1), Choi SK2), Ryoo GH3), Park KB3), Lee MH3), Bae TS1)
(1Chonbuk National Univ., Jeonju, Korea, 2MegaGen implant, Gyeongsan, Korea)

P1-Imp06 Characteristics and Osteoblastic Cells Responses of Thermally Oxidated Surface.
*Lee YJ, Jeon HR, Park KD, Lee BA, Kim YJ
(Department of Dental Science, Graduate School, Chonnam National Univ., Gwangju, Korea)

P1-Imp07 Titania Nanotubes Supported Gelatin Stabilized Gold Nanoparticles for Medical Implants.
*Neupane MP, Yu B, Kim YK, Park IS, Park HH, Bae TS, Lee MH
(Chonbuk National Univ., Jeonju, Korea)

P1-Imp08 The Basic Experiment about the Effective of Sintered Titanium Dioxide as a Bone Filling Material.
*Asai T, Hayashi T, Kuroki K, Mieki A, Kataoka H, Kawai T
(Aichi Gakuin Univ., Nagoya, Japan)

P1-Imp09 Bioactivity of Ti-6Al-4V Alloy Implant Treated with Ibandronate.
*Moon SH1), Bae TS1), So YJ1), Lee MH1), Kim BI2), Kim HS1)
(1Chonbuk National Univ., Jeonju, Korea, 2Sunchon National Univ., Suncheon, Korea)

P1-Imp10 A Finite Element Analysis of Two Different Collar Structured Implants Supporting Cantilever Fixed Partial Denture.
*Erkmen E1), Meriç G2), Kurt A3)
(1Gazi Univ., Ankara, Turkey, 2Near East Univ., Nicosia Mersin-10, Turkey, 3Atılım Univ.,
Ankara, Turkey)

P1-Imp11 Influence of Shape and Loading Direction of Zirconia Abutment on Bending Fracture Strength.
*Mashio G, Takahashi A, Sakamoto Y, Takayama M and Sakuma T
(R&D Dept. GC Corporation, Tokyo, Japan)

P1-Imp12 Development of the Carbon Nanotube-coated Anodized Titanium.
*Inoue S1), Uo M1), Hirata E1), Lee MH2), Bae TS2), Wataﬁ F3), Yokoyama A1)
(1Hokkaido Univ., Sapporo, Japan, 2Chonbuk National Univ., Jeonju, Korea)
P1-Imp13 Surface Analysis of Titanium Influenced by Plasma Glow Discharge.
*Muraji N1), Iwata T1), Kawai T2), Ueda N3), Miyazawa K3), Goto S3), Tanaka Y1) (1Department of Removable Prosthodontics, Aichi-Gakuin Univ., Nagoya, Japan, 2Department of Dental Materials Science, Aichi-Gakuin Univ., Nagoya, Japan, 3Department of Orthodontics, Aichi-Gakuin Univ., Nagoya, Japan)

P1-Imp14 Enhancements of Bone-titanium Integration by NaOCl-mediated Biofunctionalization of Titanium.
*Kono M1), Ichioka Y1), Kado T1), Fukumoto M2), Sakata M2), Aita H3), Furuichi Y1), Endo K1), Koshino H1) (1Health Sciences University of Hokkaido, Toubetsu, Japan, 2University of Hokkaido, Sapporo, Japan)


P1-Imp16 Analysis of Abutment Fracture on a Single Standing Implant.
*Yamaguchi Y1), Shiota M2), Ahn K3), Nagao H3), Kasugai S2) (1Clinic for Implant Dentistry, Dental Hospital, Tokyo Medical and Dental Univ., Tokyo, Japan, 2Oral Implantology and Regenerative Dental Medicine, Tokyo Medical and Dental Univ., Tokyo, Japan, 3Yurigaoka Dental Clinic, Kanagawa, Japan)

P1-Imp17 Study on the Biomolecular Adsorption on Titanium Implant Retrieved from Rat Bone.
*Watanabe K, Okawa S, Kanatani M, Ito K, Kaneko H, Yamaga Y (Niigata Univ., Niigata, Japan)

P1-Imp18 Enhancement of Initial Cell Attachment to a Titanium Surface Cleaned by Simple Chemical and Physical Treatments.
*Ichioka Y, Kado T, Ida Y, Aita H, Furuichi Y, Koshino H, Endo K (Health Sciences University of Hokkaido, Ishikari-Tobetsu, Japan)

P1-Imp19 Surface Characteristics of Oxide Films on Titanium-based Metals Formed by AC-type Microarc Oxidation Combined with Hydrothermal Treatment.
*Min KK, Lee SH, Lee DS, Park YJ, Song HJ (Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea)

P1-Imp20 Characteristics of BSA Release from Bone-like Apatite on Titanium Coated by Coprecipitation Method.
*Song HJ1), Kim HY1), Kohn DH2), Lee SH1), An JH1), Park YJ1) (1Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea, 2Biologic & Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, USA)

Metal

P1-Met01 Metastable Phase Formation by Miscibility Limit of Ag-Cu System in an Au-Ag-Cu-Pd Alloy during Aging Process.
*Lee SH, Lim IS, Pyo AR, Cho SY, Kwon YH, Seol HJ, Kim HI (Pusan National Univ., Yangsan, Korea)

P1-Met02 Bioactivity of Precalcified Nanotubular TiO2 Layer on Ti-6Al-4V Alloy.
*Oh HJ1), Ji JH1), Park IS1), Yoon Df2), Kim BJ2), Lee MH1), Bae TS1) (1Chonbuk National Univ., Jeonju, Korea, 2Sunchon National Univ., Suncheon, Korea)
P1-Met03 XAFS Analysis of TiO_2 Nanotube Formed on Pure Titanium Surface.  
*Uo M¹, Nitani H², Abe S³, Akasaka T⁴, Lee MH⁵, Park IS⁶, Bae TS⁷, Watari F⁸  
(¹Hokkaido Univ., Sapporo, Japan, ²High Energy Accel. Res. Org., Tsukuba, Japan, ³Chonbuk Univ., Jeonju, Korea)

P1-Met04 Corrosion and Cyto-toxicity Properties of Anodized Mg Alloys.  
*Kim YK¹, Jang YS¹, Park IS¹, Park HH¹, Yun Yi², Bae TS¹, Lee MH¹  
(¹Chonbuk National Univ., Jeonju, Korea, ²North Carolina Agricultural & Technical State Univ., Greensboro, USA)

P1-Met05 Effect of AOT-assisted Multi-walled Carbon Nanotubes on Antibacterial Activity.  
*Bai Y¹, Neupane MP², Park IS¹, Kim YK¹, Watari F², Uo M², Bae TS¹, Lee MH¹  
(¹Chonbuk National Univ., Jeonju, Korea, ²Hokkaido Univ., Sapporo, Japan)

P1-Met06 Effects of Cold-rolling on Microstructure and Magnetic Susceptibilities of Zr-14Nb Alloy.  
*Kondo R¹, Shimizu R², Suyalatu¹, Nakagawa S³, Doi H¹, Tsutsumi Y¹, Noda K², Nomura N¹, Hanawa T³  
(¹Tokyo Medical and Dental Univ., Tokyo, Japan, ²Shibaura Institute of Technology, Tokyo, Japan)

P1-Met07 Bioactivity of Precalcified Nanotubular TiO_2 Layer on Titanium Mesh.  
*Song JJ¹, Ji JH², Park IS², Park HH², Lee MH², Bae TS²  
(¹Chongam Univ., Suncheon, Korea, ²Chonbuk National Univ., Jeonju, Korea)

P1-Met08 Effects of Heat Treatment on Magnetic Susceptibility and Mechanical Properties of Zr-3Mo Alloy That Prevents the MRI Artifacts.  
*Suyalatu, Kondo R, Tsutsumi Y, Doi H, Nomura N, Hanawa T  
(Tokyo Medical and Dental Univ., Tokyo, Japan)

P1-Met09 Surface Characterization of Titanium Alloys Immersed in Denture Cleanser.  
*Takemoto S, Hattori M, Ichikawa H, Yoshinari M, Kawada E, Oda Y  
(Tokyo Dental College, Chiba, Japan)

P1-Met10 Microstructure of MRI Compatible Au-Pt-8Nb Alloy for Biomedical Application.  
*Uyama E, Inui S, Hamada K, Honda E, Asaoka K  
(Institute of Health Biosciences, the University of Tokushima, Tokushima, Japan)

P1-Met11 Castability of MRI Compatible Au Alloy for Biomedical Application.  
*Inui S, Uyama E, Hamada K, Honda E, Asaoka K  
(Institute of Health Biosciences, the University of Tokushima, Tokushima, Japan)

P1-Met12 Calcium Phosphate Formation on Zr with Micro-arc Oxidation and Chemical Treatments.  
*Tsutsumi Y¹, Ha XY², Doi H¹, Nomura N¹, Kim KH², Hanawa T³  
(¹Tokyo Medical and Dental Univ., Tokyo, Japan, ²Kyungpook National Univ., Daegu, Korea)

*Zhang ZT¹, Ding N¹, Ren L¹, Li JL², Tamaki Y² and Miyazaki T²  
(¹Capital Medical Univ., School of Stomatology, Beijing, China, ²Showa Univ., Tokyo, Japan)

P1-Met14 An Evaluation Method with Radiographic Image Quality Indicator for Internal Defects of Dental Casting Crown  
*Li Y, Zheng G, Lin H  
(¹Dental Materials Laboratory, Peking Univ. School and Hospital of Stomatology, Beijing, China)

P1-Met15 Application to Telescopic Dentures of Non-precious Alloys: Evaluation of Static Frictional Coefficients in Dental Alloys.  
*Ohida M, Nomura N, Hanawa T, Igarashi Y  
(Tokyo Medical and Dental Univ., Tokyo, Japan)
P1-Met16 The Interrelated Study of Chemical Composition and Corrosion Resistance of Dental Casting Base Alloys.
*Bai W, Lin H, Zhang D, Zheng G
(Dental Materials Laboratory, Peking Univ. School and Hospital of Stomatology, Beijing, China)

*Takaichi A1, Suyalatu1, Nomura N1, Nakamoto T2, Doi H1, Tsutsumi Y1, Kurosu S3, Chiba A1, Hanawa T1, Wakabayashi N1, Igarashi Y1
(Tokyo Medical and Dental Univ., Tokyo, Japan, 2Technology Research Institute of Osaka Prefecture, Osaka, Japan, 3Tohoku Univ., Sendai, Japan.)

*Rautray TR1, Kwon TY2, Kim KH3
(BK 21 Project and 1Department of Dental Biomaterials, School of Dentistry, Kyungpook National Univ., Daegu, Korea)

P1-Met19 Synthesis of Mg2+ Incorporated Hydroxyapatite by Ion Implantation and Their Cell Response.
Rautray TR, Kwon TY, *Kim KH
(1Department of Dental Biomaterials and BK 21 Project, School of Dentistry, Kyungpook National Univ., Daegu, Korea)

*Doi Y1, Imai Y2, Oda Y2
(’Ishifuku Metal Industry Co., Ltd., Soka, Japan, 2Tokyo Dental College, Chiba, Japan)

P1-Met21 Effect of Cr and N Contents on the Mechanical Properties of Co-Cr-Mo Alloys for Dental Applications.
*Yoda K1, Nomura N1, Chiba A2, Hanawa T1, Igarashi Y1
(Tokyo medical and dental Univ., Tokyo, Japan, 2Tohoku Univ., Sendai, Japan)

P1-Met22 Electronic Structures of the L-cysteine Film on Dental Gold-silver-copper-palladium Alloys.
*Tsujibayashi T1, Kakimoto K2, Toyoda K1, Komasa Y2
(1Dept. of Physics, 2Dept. of Geriatric Dentistry, Osaka Dental Univ., Hirakata, Japan)

P1-Met23 Effect of Cu Content and Heat Treatment on Hardness and Corrosion Resistance in Ag-Pd-Au-Cu Alloys.
*Kawashima I1, Koiso K1, Ryukata I1, Berzins DW2, Kumakura M1
(1Ohu Univ., Koriyama, Japan, 2Marquette Univ., Milwaukee, USA)

*Watanabe I1, Poulon-Quintin A2, Bertrand C2, McBride M3, Shirasaki T1, Watanabe E1
(1Nagasaki Univ., Nagasaki, Japan, 2Université de Bordeaux, ICMCB, Pessac, France, 3Baylor College of Dentistry, Dallas, USA)

Jeong YH1,2, Kim YJ1, Ko YM1, *Choe HC1
(1School of Dentistry, Chosun Univ., Gwangju, Korea, 2College of Dentistry, The Ohio State Univ., Columbus, USA)

P1-Met26 Corrosion Behavior of Si/HA/Ti Film on Porous Ti-29Nb-xZr Alloy Surface.
Kim EJ1, Jeong YH1,2, Ko YM1, *Choe HC1
(1School of Dentistry, Chosun Univ., Gwangju, Korea, 2College of Dentistry, The Ohio State Univ., Columbus, USA)
P1-Met27 Electrochemical Behavior of Silicon-doped Hydroxyapatite Film on Femtosecond Laser Textured Ti-35Ta-xHf Alloys.
Moon BH¹, Jeong YH¹(²), Ko YM¹, Fun SW³, *Choe HC¹
(¹School of Dentistry, Chosun Univ., Gwangju, Korea, ²College of Dentistry, The Ohio State Univ., Columbus, USA, ³Department of Applied Advanced Materials, Korea Polytechnic V Colleges, Gwangju, Korea)

*Cho MH¹, Cho SY², Kwon YH³, Seol HJ², Kim HI²
(¹Wonkwang Health Science Univ., Iksan, Korea, ²Pusan National Univ., Yangsan, Korea)

P1-Met29 The Effect of Recasting of Precious Metal Ceramic Alloy with Oxygen-propane Torch on the Compositions of Alloy Elements and Shear Bond Strength.
*Cho YJ, Lim HN
(Department of Dental Materials, Division of Dentistry, Graduate School, Kyung Hee Univ., Seoul, Korea)

*Yamaki R¹, Yagi S¹, Chou H-C¹, Osawa K¹, Hotta Y¹, Tamaki Y¹, Zhang Z¹ and Miyazaki T¹
(¹Showa Univ., Tokyo, Japan, ²School of Stomatology Capital Medical Univ., Beijing, China)

P1-Met31 Soda-lime Glass Can Be Available for the Binder Material of the Experimental Reusable Investment for Dental Castings.
*Yagi S¹, Chou H-C¹, Aida Y¹, Tamaki Y¹, Hotta Y¹, Zhang Z¹ and Miyazaki T¹
(¹Showa Univ., Tokyo, Japan, ²School of Stomatology Capital Medical Univ., Beijing, China)

P1-Met32 Microstructural and Physical Property Changes of Titanium by Alloying with Varying Amounts of Gold.
*Park YJ, Lee YR, Kim JY, Kim MK, Park KH, Song HJ
(Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea)

(Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea)

Biocompatibility

*Han L, Okiji T.
(Niigata Univ, Niigata, Japan)

P1-Bio02 Bioactivity and Histologic Response to a Novel Calcium Phosphate/Calcium Silicate/Bismutite Cement for Dental Pulp Capping.
*Sun J, Shen QY
(Shanghai Biomaterials Research & Testing Center, Shanghai Key Laboratory of Stomatology, Ninth People’s Hospital, Shanghai Jiaotong Univ., Shanghai, China)

P1-Bio03 Carbon Nanotube-coated Silicone as a Flexible Biomedical Material.
*Matsuoka M¹, Akasaka T¹, Hashimoto T², Totsuka Y³, Watari F¹
(¹Hokkaido Univ., Sapporo, Japan, ²Meijo Nano Carbon Co., Ltd., Nagoya, Japan)
P1-Bio04 Fabrication of Spherical Hydroxyapatite Granules with Interconnected Pore Channels using Camphene by Emulsion Method.
*Yang JH1), Kim KH1,2), Kwon TY1,2)
(1Department of Medical & Biological Engineering, Graduate School, Kyungpook National Univ., Daegu, Korea, 2School of Dentistry, Kyungpook National Univ., Daegu, Korea)

P1-Bio05 Histological and TEM Observation of Subcutaneous Tissues Exposed to Particulate Pure Metals.
*Saitoh S, Sasaki K, Nezu T, Taira M
(Iwate Medical Univ., Morioka, Japan)

P1-Bio06 Development of an in vitro Embryotoxicity Screening System Include the Human Metabolic Factor.
*Imai K1), Takashima M2), Tanoue A3), Nakamura K3), Takeda S1)
(1Osaka Dental Univ., Osaka, Japan, 2Hatano Res. Inst., FDSC, Kanagawa, Japan, 3National Res. Inst. for Child Health and Development, Tokyo, Japan)

P1-Bio07 Involvement of Fenton Reaction in Cytotoxicity of TEGDMA and HEMA.
*Zhu TT, Kim NR, Son KM, Park HC, Lim BS, Yang HC
(Seoul National Univ., Seoul, Korea)

P1-Bio08 Self-assembling Peptide Scaffolds and Dedifferentiated Fat Cells for Bone Tissue Engineering.
*Hashimoto Y1), Kishimoto N1), Momota Y1), Omasa T1), Kotani J1), Takeda S1)
(1Osaka Dent Univ., Osaka, Japan, 2Tokushima Univ., Tokushima, Japan)

P1-Bio09 Photocatalytic Activity of Synthetic Oxyapatite.
*Kamemizu H, Komada Y, Iijima M, Wakamatsu N, Adachi M, Shibutani T, Doi Y
(Asahi Univ., Gifu, Japan)

P1-Bio10 Effects of Genistein on the Proliferation and Differentiation in Rat Dental Pulp Cells.
*Hayashi K, Handa K, Koike T, Polan MA, Saito T
(Division of Clinical Cariology and Endodontology, Department of Oral Rehabilitation, School of Dentistry, Health Sciences University of Hokkaido, Tobetsu, Japan)

*Handa K, Koike T, Hayashi K, Saito T (Division of Cariology and endodontology, Department of oral rehabilitation, School of Dentistry, Health Sciences University of Hokkaido, Tobetsu, Japan)

P1-Bio12 Micro Morphological Study of Reparative Dentin Induced by Phosphophoryn in Rats.
*Koike T, Handa K, Hayashi K, Polan MA, Saito T
(Division of Clinical Cariology and Endodontology, School of Dentistry, Health Sciences University of Hokkaido, Tobetsu, Japan)

P1-Bio13 Cell Proliferation on Carbon Nanotubes Coated Dishes in Different Cell Lines.
*Akasaka T, Abe S, Uo M, Watari F
(Asahi Univ., Gifu, Japan)

P1-Bio14 In vitro and in vivo Evaluation of Biocompatibility of Partially Stabilized Zirconia.
*Choi YR1,2), Odontuya DORJ3), Lee YK1), Koh YH4), Kim KN1,2), Kim KM1,2)
(1Research Center for Orofacial Hard Tissue Regeneration, Seoul, Korea, 2Yonsei Univ., Seoul, Korea, 3Mongolia National Univ., Ulaanbaator, Mongolia, 4Korea Univ., Seoul, Korea)

P1-Bio15 Osteoinduction with Non-sintered Porous Carbonate Apatite in Dog Dorsal Muscle.
*Shibatsui A, Kanayama K, Takagi M, Shiraki M, Kitago M, Shibutani T, Doi Y
(Asahi Univ., Gifu, Japan)

P1-Bio16 Chemical Deposition of Carbonate-containing Apatite after Introducing Various Functional Groups to the SAM-processed Ti Surface.
(Asahi Univ., Gifu, Japan)
P1-Bio17 Effect of Multi-walled Carbon Nanotubes and Saliva on Streptococcus Mutans Biofilm Formation.
*Kim GR1, Yu B2, Park IS1, Jeon WY2, Akasaka T3, Watari F3, Lee MH1, Bae TS1
(1Chonbuk National Univ., Jeonju, Korea, 2Gwangyang Health College, Gwangyang, Korea, 3 Hokkaido Univ. Sapporo, Japan)

P1-Bio18 Influence on Osteogenesis of Titanium Immobilized with Heparin-coated Hydroxyapatite particles.
Yang DH, Bae MS, Lee WJ, Kim JE, Park HN, *Kwon IK,
(Dept. of Maxillofacial Biomedical Engineering, School of Dentistry, Kyung Hee Univ., Seoul, Korea)

*Bae MS, Moon HJ, Yang DH, Kim JH, Lee JB, Kwon IK
(Dept. of Maxillofacial Biomedical Engineering, School of Dentistry, Kyung Hee Univ., Seoul, Korea)

P1-Bio20 Biodistribution of Micro-/Nano-sized Particles and Their Cytotoxicity.
(Hokkaido Univ., Sapporo, Japan)

P1-Bio21 Hard Tissue Compatibility on GRGDS Peptide Immobilized on Titanium through Electrodeposited NH2-PEG-COOH.
*Oya K1, Tsutsumi Y2, Doi H2, Nomura N2, Hanawa T2
(1Kogakuin Univ., Tokyo, Japan, 2Tokyo Med. and Dent. Univ., Tokyo, Japan)

P1-Bio22 Controlled CaCO3 Formation using Biomimetic Macromolecules.
*Abe S1, Fujii Y1, Kusuhara A1, Yamatoya E1, Ishida T1, Akasaka T1, Uo M1, Watari F1, Hayashi D1, Takada T1
(1Hokkaido Univ., Sapporo, Japan, 2Asahikawa Natl College Tech., Asahikawa, Japan)

Lee K, Lee SJ, Kim BH, *Ko YM
(Department of Dental Materials, School of dentistry, MRC center, Chosun Univ., Gwangju Korea)

P1-Bio24 Immobilization of Hyaluronic Acid and Carboxymethyl Chitosan onto Functionalized Titanium Surfaces.
*Kim BH
(Department of Dental Materials, School of Dentistry, Chosun Univ., Gwangju Korea)

Shim JW, Lee WG, Kim BH, *Ko YM
(Department of Dental Materials, School of Dentistry, MRC Center, Chosun Univ., Gwangju Korea)

*Ko YM, Kim BH, Lim SS, Park JH
(Department of Dental Materials, School of Dentistry, MRC Center, Chosun Univ., Gwangju Korea)

P1-Bio27 Electrochemical Deposited Hydroxyapatite Film on the Anodized Titanium.
Kwon SS, Park CH, Kim BH, *Ko YM
(Department of Dental Materials, School of Dentistry, MRC Center, Chosun Univ., Gwangju Korea)
P1-Bio28  The Biocompatibility of RGD Peptide onto the Plasma-modified Acrylic Acid (AA) Surfaces.  
Ko JH, Seo KW, Kim BH, *Ko YM  
(Department of Dental Materials, School of Dentistry, MRC Center, Chosun Univ., Gwangju Korea)

P1-Bio29  Effect of Periosteum and Absorbable Membrane on Resorption of Iliac Bone Graft in Rabbit Calvarium.  
*Yang JW¹, Jeoung YW¹, Kim KR¹, Park YJ², Kook MS¹  
(¹Department of Oral & Maxillofacial Surgery, ²Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea)

*Song YH, Jung YH, Han OS, Choi HR, Song HJ, Park YJ  
(Department of Dental Materials, School of Dentistry, Chonnam National Univ., Gwangju, Korea)
Poster Presentation II: Saturday, May 28, 04:00 pm – 05:00 pm, Seminar Room 2-3

Ceramics

P2-Cer01 UV Irradiation Effect of TiO$_2$ Nanotubes on the Osteogenic Differentiation of Human Mesenchymal Stem Cells.
*Moon KS, Bae JM, Oh SH
(Department of Dental Biomaterials, College of Dentistry, Wonkwang Univ., Iksan, Korea)

P2-Cer02 The Effect of Surface Treatment on the Shear Bonding Strength between Zirconia Core and Veneering Ceramic.
*Jung SH, Bae JM, Oh SH
(Department of Dental Biomaterials, Wonkwang Univ., Iksan, Korea)

P2-Cer03 Effect of Abrasive and Fiber Component in Medium on Occlusal Wear of Antagonist and Porcelain.
*Kakuta K, Ogura H
(Nippon Dental Univ., Niigata, Japan)

P2-Cer04 The Application of Zirconia to the Major Connector Part 3. The Influence of Water on Maximum Load.
*Sanoaka S, Iwahori M, Sawada T, Goto T, Miyao M
(Asahi Univ., Gifu, Japan)

P2-Cer05 Influence of Vacuum Ultra-violet Irradiation on the Bond Strength of Zirconia Ceramics to Resin Composites.
*Yamaguchi Y, Hata U, Hotta M, Fujiwara S, Doi Y
(Asahi Univ., Gifu, Japan)

P2-Cer06 Toughening of Dental Ceramics by Silver Carbonate Paste.
*Uno M, Ito T, Nonogaki R, Kurachi M, Wakamatsu N, Doi Y
(Asahi Univ., Gifu, Japan)

P2-Cer07 Influence of Silver Carbonate Slurry on the Strength of Dental Ceramics.
*Ito T, Fujieda T, Uno M, Kurachi M, Wakamatsu N, Doi Y
(Asahi Univ., Gifu, Japan)

P2-Cer08 Deposit Behavior of Calcium Phosphate on Titanium Plate under Anodic and Cathodic Electrolysis.
*Okawa S, Ito K, Kaneko H, Yamaga Y, Watanabe K, Kanatani M
(Niigata Univ., Niigata, Japan)

P2-Cer09 Porosity of Dental Gypsum Products during Setting and Heating Process.
*Bae J-Y$^{1,2}$, Hamada K$^1$, Lee H-H$^2$, Asaoka K$^1$
($^1$Tokushima Univ., Tokushima, Japan, $^2$Dankook Univ., Cheonan, Korea)

P2-Cer10 Analysis of Bonding Interface in Veneering Porcelain/ Zirconia Composite.
*Ozawa M$^1$, Aoyagi H$^1$, Kazama M$^1$, Ueda K$^2$, Watanabe F$^1$
($^1$The Nippon Dental Univ. School of Life Dentistry at Niigata, Niigata, Japan, $^2$The Nippon Dental Univ. Niigata Hospital, Niigata, Japan)

P2-Cer11 Effect of Various Crystals and Its Supernatant on Hardening of Dental Plaster.
*Umemoto K, Aoyagi Y, Kurata S, Yamada M, Nakahara S
(Kanagawa Dental College, Yokosuka, Japan)

P2-Cer12 Effect of Soluble Ions Released from OCP on Osteoblastic Differentiation.
*Shiraishi N$^{1,2}$, Anada T$^1$, Honda Y$^1$, Sasaki K$^2$, Suzuki O$^1$
($^1$Division of Craniofacial Function Engineering, $^2$Division of Advanced Prosthetic Dentistry, Tohoku Univ., Sendai, Japan)
P2-Cer13 Effect of Fiberglass Length on Diametral Tensile Strength of Calcium Phosphate Cement.
*Asakawa Y1), Takahashi H1), Kobayashi M2), Iwasaki N3), Shiozawa M4), Asakawa Y5), Zoljargal P6), Kooottathape N7)
(1Tokyo Medical and Dental Univ., Tokyo, Japan, 2Chiba Institute of Technology, Chiba, Japan)

P2-Cer14 Comparison of Translucency of Ceramic Core Materials at Different Thickness.
(Tokyo Medical and Dental Univ., Tokyo, Japan)

P2-Cer15 Fracture Toughness of 3Y-TZP Ceramics Sintered by Microwave Furnace.
*Kim NS1), Choi BJ1), Park SB2), Asaoka K3), Lee HH4)
(1Dankook Univ., Cheonan, Korea, 2SB-Dental Ceramic Co., Korea, 3University of Tokushima, Tokushima, Japan)

P2-Cer16 Fracture Resistance of Ceramic MOD Inlays Machined from Three Dental CAD-CAM Ceramics.
*Choi BJ1), Kim NS1), Park JG2), Lee HH4)
(1Dankook Univ., Cheonan, Korea, 2Dankook Univ., Yongin, Korea)

P2-Cer17 Apatite Forming Ability in vitro of HA-containing Glass Powders for Coating on Zirconia.
*Noda M1), Okuda Y1), Tsuruki J1), Miyamoto M1), Ban S2)
(1Kagoshima Univ., Kagoshima, Japan, 2Aichi Gakuin Univ., Nagoya, Japan)

P2-Cer18 Change in the Stress Induced Transformation of Dental Zirconia with Firing Temperature.
*Okuda Y1), Noda M1), Tsuruki J1), Miyamoto M1), Ban S2)
(1Kagoshima Univ., Kagoshima, Japan, 2Aichi Gakuin Univ., Nagoya, Japan)

P2-Cer19 In vitro and in vivo Evaluation of Strontium-substituted Apatite Bone Cement.
*Sekine K, Hamada K, Uyama E, Yamashita K, Kawano F, Asaoka K
(The University of Tokushima Graduate School, Tokushima, Japan)

P2-Cer20 Evaluation of Silica-doped Y-TZP for Dental Restorations.
*Usami H1), Nakamura T1), Nishida H2), Sekino T3), Onishi H4), Takeuchi M5), Yatani H1)
(1Osaka Univ., Osaka, Japan, 2Osaka Dental Univ., Osaka, Japan, 3Tohoku Univ., Sendai, Japan, 4NIKKATO Co., Osaka, Japan)

P2-Cer21 Effect of Fluoride Dose in Calcium Phosphates Obtained from OCP Co-precipitation on Osteoblastic Cellular Response and Solubility.
*Shiwaku Y1,2), Anada T1), Honda Y3), Morimoto S2), Sasaki K1), Suzuki O2)
(1Division of Advanced Prosthetic Dentistry, 2Division of Craniofacial Function Engineering, Tohoku Univ., Graduate School of Dentistry, Sendai, Japan)

P2-Cer22 Examination of Porcelain Veneering Procedure for Zirconia-based Nanocomposites.
*Terui Y, Sato K, Kuriyama S, Kunii J, Hotta Y, Goto D, Miyazaki T
(Showa Univ., Tokyo, Japan)

CAD/CAM

P2-CAD01 Push-shear Bond Strength between CAD/CAM Zirconia Ceramic Core and Zirconia Veneering Ceramics.
*Lee JH1), Jin JH1), Kim YK2), Ji JH2), Park IS2), Lee MH2), Bae TS2)
(1Gwang-Ju Health College, Gwangju, Korea, 2Chonbuk National Univ., Jeonju, Korea)

P2-CAD02 Clinical Application and Possibility of Nano Zirconia.
*Suese K
(Osaka Dental Univ., Osaka, Japan)
P2- CAD 03 Dental Implant Surgical Navigation System by Retinal Imaging Display.
*Yamaguchi S1), Yamanishi Y1,2), Ono S1,2), Yatani H3), Imazato S1) (1Dept. of Biomaterials Science, 2Dept. of Fixed Prosthodontics, Osaka Univ. Graduate School of Dentistry, Osaka, Japan)

Miscellaneous
P2-Mis01 Changes of Crystallinity of Hydroxyapatite Powder and Structure of Enamel Treated with Several Concentrations of Ammonium Hexafluorosilicate.
*Suge T, Shibata S, Matsuo T (University of Tokushima Graduate School, Tokushima, Japan)

P2-Mis02 Development of Tetracycline Loaded Dental Varnish and Antibacterial Effect.
*Park JY1), Choi KH2), Bae JM1), Oh SH1) (1Dept. of Dental Biomaterials, Wonkwang Univ., Iksan, Korea, 2Dept. of Oral microbiology, Wonkwang Univ., Iksan, Korea)

P2-Mis03 Light Transmittance and Reflectance Characteristics of Restorative Composite Resins.
*Arikawa H, Kanie T, Fujii K (Kagoshima Univ., Kagoshima, Japan)

P2-Mis04 Metal Component Analyses of Metal-ceramic Crowns Circulated in Four Regions of the World.
*Yoshinari M1), Matsumoto N1), Abe S2), Igarashi T2) (1Tokyo Dental College, Chiba, Japan, 2Kanagawa Dental College, Yokosuka, Japan)

P2-Mis05 Analyses of Stress Distributions and Fracture Strength of Pulpless Teeth Restored with Fiber Posts.
*Takeda Y1), Hayashi M1), Furuya Y1), Ebisu S1), Huang H2), Fok A3) (1Osaka Univ. Graduate School of Dentistry, Suita, Japan, 2University of Minnesota, Minnesota, USA)

P2-Mis06 Development of Polydimethylsiloxane-based Three Dimensional Cell Culture Chip.
*Anada T, Suzuki O (Tohoku Univ., Sendai, Japan)

P2-Mis07 Ability of CPP-ACP Paste and Arginine in Calcium Carbonate Toothpaste to Occlude Dentinal Tubules.
*Kanchanasantikul P, Hanirattisai C, Banomyong D (Mahidol Univ., Bangkok, Thailand)

P2-Mis08 Surface Properties of Denture Base Resin after Several Disinfection Methods.
*Sawada T, Odagiri K, Hori N, Hoshi N, Hamada N, Kimoto K (Kanagawa Dental College, Yokosuka, Japan)

P2-Mis09 The Physical Properties of Recycled Gypsum in Different Heating Processes.
*Sinlaparatsami S, Urapepon S (Mahidol Univ., Bangkok, Thailand)

P2-Mis10 Dental Restorations Found in Food as Foreign Substances during Dining.
*Goto S1), Ohkuma K1), Ogura H1), Onozaki S1) (1Nippon Dental Univ., Niigata, Japan, 2Zensho Co., Tokyo, Japan)

P2-Mis11 Influence of Whitening Material on Enamel to Hardness of Bovine Teeth.
*Zhang D, Lin H, Zheng G, Zheng R (Dental Materials Laboratory, Peking Univ. School and Hospital of Stomatology, Beijing, China)

P2-Mis12 Influence of Conditioning Agents for a Resin-based Sealer on the Root Canal Wall.
*Ogura Y, Maeda M, Katsuumi I (Nippon Dental Univ., Tokyo, Japan)
P2-Mis13 Diffusion of an Antimicrobial Acriflavine through a Concentrated Solution of Hyaluronic Acid as a Matrix Component of Biofilms.
*Nezu T, Sasaki K, Saitoh S, Taira M
(Iwate Medical Univ., Morioka, Japan)

P2-Mis14 Influence of Dentin and Enamel Porcelain Thickness on Layered All-ceramic Restoration Color.
*Ju SW1), Choi YS2), Kim MJ2), Ahn JS3)
(1Seoul National Univ., Seoul, Korea, 2Korea Univ., Seoul, Korea)

P2-Mis15 Evaluation of Behavior of Dust in Dental Clinic Office and Laboratory using Particle of Noble Metal Alloy as Marker.
(Niigata Univ., Niigata, Japan)

P2-Mis16 Flexural Strength of Experimental HEMA-free Resin-modified Glass Ionomer.
*Hibino Y, Nagasawa Y, Omatsu I, Shimano I, Nakajima H
(Meikai Univ., Saitama, Japan)

P2-Mis17 Sr Enriched Teeth: Structural Analysis and Mechanical Properties,
*Uo M1), Asakura K2), Honda S3), Kogo Y2), Soga K3), Nakatsuka T3), Watari F3)
(1Hokkaido Univ., Sapporo, Japan, 2Tokyo Univ. Sci., Noda, Japan, 3Shofu Inc., Kyoto, Japan)

P2-Mis18 Disinfection of Dental Stone Casts: Effect on Surface Morphology.
*Nishikiori R1), Watanabe K1), Nomura T1), Hirata I1), Sawajiri M1), Okazaki M1)
(Graduate School of Biomedical Sciences, Hiroshima Univ., Hiroshima, Japan, 2Faculty of Dentistry, Hiroshima Univ., Hiroshima, Japan)

P2-Mis19 Fluoride Release and Mechanical Properties of Restorative Glass Ionomer Cements.
(Tokyo Medical and Dental Univ., Tokyo, Japan)

P2-Mis20 In-office Power Bleaching Preserves the Microstructural Integrity of Enamel against Acidic Deterioration.
*Tanaka R, Shibata Y, Ogura K, Manabe A, Hisamitsu H, Miyazaki T
(Showa Univ., Tokyo, Japan)

*Churei H1), Abe K1), Kobayashi M1), Takahashi H1), Ueno T1)
(1Tokyo Medical and Dental Univ., Tokyo, Japan, 2Chiba Institute of Technology, Chiba, Japan)

P2-Mis22 Influence of Acidic and Slightly Acidic Electrolyzed Water on Dental Unit Components.
*Aoki H, Suzuki I, Maruta K, Miyasaka T
(Nippon Dental Univ., Tokyo, Japan)

P2-Mis23 S9 Fraction Broke Down Bis-GMA to Its Metabolites without Metabolic Activation.
*Hongo T1), Hikage S2), Takahashi H1)
(1Tokyo Medical & Dental Univ., Tokyo, 2Health Sciences University of Hokkaido, Ishikari-gun, Japan)

P2-Mis24 Effect of Helium Plasma Needle Treatment on Disinfection of Microorganisms Contaminated Surfaces. Han IH1), Lee DH1), Kim HY1), Kwon BJ2), Kang JK1), Lee MH1,2), Kim HH1), *Park JC1,2)
(1Cellbiocontrol Laboratory, Department of Medical Engineering, 2Brain Korea 21 Project for Medical Science, Yonsei Univ. College of Medicine, Seoul, Korea)
Devices

P2-Dev01  Comparison of Cutting Aspect of Stainless Steel Gates-Glidden Bur and Peeso Reamer.
*Maeda M, Ogura Y, Katsuumi I
(Nippon Dental Univ., Tokyo, Japan)

P2-Dev02  Effects of Self-ligation on Stainless Steel Archwires.
*Choi S, Joo HJ, Cheong Y, Lee SH, Kwon ER, Paek JH, Park YG, Park HK
(Kyung Hee Univ., Seoul, Korea)

P2-Dev03  Development of a Small Isotonic Ozone Water Generator.
*Arai K1,3,4), Hosoya M2), Sasao M3), Akashi Y3), Hirose H3), Yoneyama T3), Tamaki T3), Miyazaki T3), Ando N3)
(1*Nippon Makisen Kogyo, 2*Hosoya Dental Clinic, 3*Nihon Univ., 4*Showa Univ., 5*Nippon Dental Univ. at Tokyo, Japan)

P2-Dev04  A Method for Analyzing Alloy Composition of Metallic Restorations and Prostheses Placed in a Patient’s Mouth by Sampling an Ultra Small Amount of Metal Powders.
*Nagano F, Ida Y, Hashimoto M, Ohno H, Endo K
(Health Sciences Univ., of Hokkaido, Ishikari-Tobetsu, Japan)
Poster Presentation III: Sunday, May 29, 10:30 pm – 11:30 am, Seminar Room 2-3

Adhesion

P3-Adh01 Water Resistance of Novel Silane having Hydrophobic and Polymerizable Group.
*Nihei T1, Kunzelmann KH2, Shimizu T3, Ohashi K4, Miyake K1, Kurata S1, Kondo Y3, Umemoto K3, Yoshino N3, Teranaka T1
(1Kanagawa Dental College, Kanagawa, Japan, 2Dental School of LMU, Munich, Germany, 3Tokyo University of Science, Tokyo, Japan)

P3-Adh02 Effect of HEMA in Bonding Agent on Adhesion of Resin to Enamel and Dentin.
*Hirabayashi S, Hayakawa T
(Tsurumi Univ., Yokohama, Japan)

P3-Adh03 Ag2O-doped Bioglass as an Inhibitor of Matrix Metallloproteinases.
*Hashimoto M, Nagano F, Ida Y, Endo K
(Health Sciences University of Hokkaido, Ishikari-Tobetsu, Japan)

P3-Adh04 Relationship between Thin-film Bond Strength and Indentation Hardness for One-step Bonding Agents.
*Kusakabe S, Hotta M
(Asahi Univ., Gifu, Japan)

P3-Adh05 Application of Various Lining Materials to Dental Hard Tissues Irradiated by Er:YAG Laser.
*Yasu K, Yoshikawa K, Onda K, Zennyu K, Sunada K, Yamamoto K
(Department of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Adh06 Study of Newly-developed High Power LED Curing Light Unit - Influence on Bonding Resin.
*Ouchi S, Hatsuoka Y, Nishida H, Matsuda T, Inoue M, Yamamoto K
(Department of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Adh07 H2O2 Production from Different Types Metal Plates Adherent Human Polymorphoniclear Leukocytes.
*Moriguchi K1, Takahashi Y2, Kawai T2, Ohno N1
(1Oral Anatomy, 2Dental Materials, Aichi-Gakuin Univ., Nagoya, Japan)

P3-Adh08 The Influence of Creep Properties and the Shear Bond Strength of Dental Resin Cement.
*Kim YZ, Oh MH
(Vericom CO., LTD., Anyang-Si, Korea)

P3-Adh09 Effect of Silane and Alkali Treatment on the Shear Bonding Strength between Alloys and PMMA Resin.
*Ha JY1, Kwon TY1,2, Kim KH1,2
(1Department of Medical & Biological Engineering, Graduate School, Kyungpook National Univ., Daegu, Korea 2Department of Dental Biomaterials, School of Dentistry Kyungpook National Univ., Daegu, Korea)

P3-Adh10 An Evaluation of the Brazilian Disc Test for Bond Strength Measurement.
*Huang SH, Lin L, Fok A
(Minnesota Dental Research Center for Biomaterials and Biomechanics, School of Dentistry, University of Minnesota, Minneapolis, USA)

P3-Adh11 Adhesion of Putty Condensation Silicone and Light Body Addition Silicone.
*Aerarunchot S, Prunkngarmpun C, Amornporncharoen M, Julnithi A, Santipipat C
(Khon Kaen Univ., Khon Kaen, Thailand)

P3-Adh12 Development of One-step Bonding Agent.
(Nihon Univ., Matsudo, Japan)
P3-Adh13 Restoration of Vertically Fractured Teeth by Adhesion and Replantation - Adhesive Strength of Resin Cements for Root Dentin.
*Onda K, Hatsuoka Y, Yasuo K, Matsuda T, Yamamoto K
(Osaka Dental Univ., Osaka, Japan)

P3-Adh14 Bonding Characteristics of Orthodontic Adhesives to Experimental Zirconia Bracket Applied with Several Pre-treatments for the Bonding.
*Fujishima A, Tanabe S, Manabe A, Maki K, Miyazaki T
(Showa Univ., Tokyo, Japan)

P3-Adh15 A Study on Shear Bond Strength and Adhesive Durability of Self-adhesive Resin Cements According to Wet Conditions of Dentin Surface.
*Kim YH, Lim HN
(Department of Dental Materials, Division of Dentistry, Graduate School, Kyung Hee Univ., Seoul, Korea)

P3-Adh16 Nanostructure Evaluation of Healthy and Fluorotic Dentin by AFM after Etching with Phosphoric Acid.
*Juan Pablo Loyola-Rodriguez1), Rafael Rene Aguilera-Flores1), Veronica Zavala-Alonso1), Nuria Patiño-Marin1), Gabriel A. Martínez-Castañón1), Kenneth J. Anusavice2)
(1Advanced Education General Dentistry Program, San Luis Potosi Univ., Mexico, 2Center for Dental Biomaterials, College of Dentistry, University of Florida, USA)

P3-Adh17 Tensile Bond Strength Evaluation of Bonded Molar Tubes on Fluorotic Enamel.
*Alejandra Loyola-Leyva, Erika Silva-Benitez, Veronica Zavala-Alonso, Alejandro Martínez-Castañon, Juan Pablo Loyola-Rodriguez, Nuria Patiño-Marin, Irene Ortega-Pedrajo
(Advanced Education General Dentistry Program, San Luis Potosi Univ., Mexico)

Composite

P3-Com01 Effect of Thermal Cycling on the Bi-axial Flexural Strengths of Dental Nano-Filled Composite Resin.
*Kwon HM1), Kim GR2), Ji JH3), Park IS2), Jin GC3), Lee MH3), Bae TS3)
(1Hallym College., Chuncheon, Korea, 2Chonbuk National Univ., Jeonju, Korea, 3Binzhou Medical Univ., Yantan, China)

P3-Com02 Effect of Thermal Cycling on the Transverse Strength of Nano-filled Composite Resin for Dental Restoration.
*Kim KS1), Park JE2), Ji JH3), Park IS2), Jin GC3), Lee MH2), Bae TS3)
(1Jeonju Kijeon College, Jeonju, Korea, 2Chonbuk National Univ., Jeonju, Korea, 3Binzhou Medical Univ., Yantan, China)

P3-Com03 Effect of Filler Particle Size and Morphology on the Mechanical Properties of Nanofiller Containing Resin Composites.
*LIN J1), Shinya A1), Gomi H1), Shinya A1), Zheng G2), Lin H2), Han JM2)
(1The Nippon Dental Univ., Tokyo, Japan, 2Dental Materials Laboratory, Peking Univ., Beijing, China)

P3-Com04 Depth of Cure of Light-activated Nanofiller Containing Resin Composites.
*Kanehira M1), Hoshino T1), Utterodt A2), Finger WJ1), Komatsu M1)
(1Tohoku Univ., Graduate School of Dentistry, Sendai, Japan, 2Heraeus Kulzer GmbH, Wehrheim, Germany)

P3-Com05 Effect of Different Core Stiffness on Fracture Resistance of Endodontically Treated Teeth with Flared Root.
*Varauboln C1), Takahashi H2), Arksornnukit M1)
(1Faculty of Dentistry, Chulalongkorn Univ., Bangkok, Thailand, 2Advanced Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)
P3-Com06 Comparative Study of Wear Resistance and Surface Roughness of the Nanofiller Containing Composites and Microhybrid Composites. Jianmin Han1), Hong Lin1), *Gang Zheng1), Akiyoshi Shinya2), Harunori Gomi2), Akikazu Shinya2), Jie Lin2) (1Peking Univ., Beijing, China, 2The Nippon Dental Univ., Tokyo, Japan)

P3-Com07 Color Stability of Resin Cements after Ultraviolet Artificial Aging. *Lueangwattanakij R1), Takahashi H2) and Arksornnukit M1) (1Faculty of Dentistry, Chulalongkorn Univ., Bangkok, Thailand, 2 Advanced Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)

P3-Com08 Fracture Resistance of Endodontically Treated Teeth Restored with Different Fiber Reinforced Composite Post Lengths. *Jiangkongkho P1), Takahashi H2) and Arksornnukit M1) (1Faculty of Dentistry, Chulalongkorn Univ., Bangkok, Thailand, 2 Advanced Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)

P3-Com09 Effect of Different Silane Coupling Agent Amounts Silanized on Alumina Filler on Flexural Strength of Methacrylate Denture Base. *Chaijareenont P1), Takahashi H2) and Arksornnukit M1) (1Faculty of Dentistry, Chulalongkorn Univ., Bangkok, Thailand, 2Advance Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)

P3-Com10 Optimum Design of Glass Fiber Reinforced Resin Bridge: Part1 Effect of Glass Fiber Reinforce for Flexural Strength. *Gomi H1), Akikazu Shinya2), Yokoyama D1), Akihiro Shinya1), Akiyoshi Shinya1) (1Nippon Dental Univ., Tokyo, Japan, 2University of Turku, Turku, Finland)

P3-Com11 Effect of Filler Particle Alloy of Magnetic Composite Resin and Magnet Type on Magnetic Attractive Force. *Soma H, Miyagawa Y (The Nippon Dental Univ., Niigata, Japan)

P3-Com12 Optical and Mechanical Properties of Poly (Methyl Methacrylate)/Montmorillonite Nanocomposites. *Yamagata S, Akasaka T, Uo M, Iida J, Watari F (Hokkaido Univ., Sapporo, Japan)

P3-Com13 Effect of Light Sources on Vickers Hardness of Resin Composites. *Hasegawa M, Kita D, Okada I, Ishikawa A (Nippon Dental Univ. Hospital, Tokyo, Japan)

P3-Com14 Flexural Behavior of Collagenous Matrix Consolidated by a Warm Isostatic Pressing. *Iijima M, Wakamatu N, Kamemizu H, Adachi M, Doi Y (Asahi Univ., Dental Materials and Science, Mizuho, Gifu 501-0296, Japan)

P3-Com15 Porous Zirconia/Hydroxyapatite Scaffolds for Bone Reconstruction Combined with Bone Regeneration. *An SH1), Matsumoto T3), Miyajima H1), Kim KH2), Imazato S1) (1Osaka Univ., Osaka, Japan, 2Kyungpook Univ., Daegu, Korea)

P3-Com16 Study of the Toothbrush Abrasion of Composite Resin. *Komasa R, Yoshikawa K, Takeuchi O, Komasa N, Miki H, Yamamoto K (Department of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Com17 Fatigue Strength of Filler Hybrid Type Resin Composite - Effect of Filler Size on Fatigue Strength. *Nishikawa T1), Toyama T3), Takahashi H2) (1Osaka Inst. Tech., Osaka, Japan, 2Tokyo Med. Dent. Univ., Tokyo, Japan)
*Kim DA, Kim GR, Kim HH, Lee HH
(Dankook Univ., Cheonan, Korea)

P3-Com19  Correlation between Color Change of Resin Composites and Exposure Time to Xenon Lamp Radiation.
*Saito W, Ikejima I, Yamamoto T, Momoi Y
(Tsurumi Univ., Yokohama, Japan)

P3-Com20  Influence of the Home Whitening to the Discolored Resin Composite.
*Maseki T^1, Itagaki Y^2, Sakamoto M^2, Shiozawa M^2, Sugawa Y^2, Furumoto H^2, Yamakawa D^3
(Dept of Endodontics and Operative Dentistry, Nippon Dental Univ., Tokyo, Japan,
^1Dept of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Com21  Study on Newly High Power LED Curing Light Unit - Influence of Curing of Composite Resins.
*Yokota K, Iwata N, Suzuki K, Yoshikawa K, Miyaji H, Yamamoto K
(Department of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Com22  Characteristics of Recent Veneering Composite Resins.
(Advanced Biomaterials, Graduate School of Medical and Dentistry, Tokyo Medical and Dental Univ., Tokyo, Japan)

*Kato T^2, Saigo K^3, Yamada B^3, Yamauchi J^3, Nagai M^2, Yamamoto S^2
(Kochi University of Technology, Kochi, Japan,
^1Kochi Univ., Japan, ^2Department of Operative Dentistry, Osaka Dental Univ., Osaka, Japan)

P3-Com24  Influence of Third Body Media on Wear of Composite Resins.
*Koottathape N^1, Takahashi H^1, Iwasaki N^1, Finger WJ^2, Angwarawong T^3, Arksornnukit M^3
(Tokyo Medical and Dental Univ., Tokyo, Japan,
^1Tokyo Medical and Dental Univ., Tokyo, Japan,
^2Advanced Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)

P3-Com25  The Effect of Three Different Surface Treatments on the Retention of Composite Core Material on Prefabricated Post-heads.
*Youssef S. Al Jabbari
(Dental Biomaterials Research and Development Chair, College of Dentistry, King Saud Univ., Riyadh, Saudi Arabia)

Polymer

P3-Pol01  Influence of Sericin Powder on the Water Absorption Characteristics of Tissue Conditioners.
*Hong G^1, Dillinur MS^1, Sasaki K^1, Hamada T^1, Zhao XY^2
(^1Tohoku Univ., Sendai, Japan,
^2The Fourth Military Medical Univ., Xi'an, China)

P3-Pol02  Bone Regeneration Ability of Silk Fibroin Membrane for the Guided Bone Regeneration Technique.
*Song JY^1, Kim SG^1, Kweon HY^2
(^1Gangneung-Wonju National Univ., Gangneung, Korea,
^2RDA, Suwon, Korea)

P3-Pol03  Time-dependent Changes in the Hardness of Elastomeric Impression Materials.
*Im SY, Lee SB, Kim KM, Kim KN
(Department and Research Institute of Dental Biomaterials and Bioengineering and Research Center for Orofacial Hard Tissue Regeneration, College of Dentistry, Yonsei Univ., Seoul, Korea)

P3-Pol04  In vitro Wear Resistance of Artificial Denture Teeth.
*Suwannaroop P^1, Chaijareenont P^1, Koottathape N^1, Takahashi H^3 and Arksornnukit M^1
(^1Faculty of Dentistry, Chulalongkorn Univ., Bangkok, Thailand,
^2Advanced Biomaterials, Graduate School, Tokyo Medical and Dental Univ., Tokyo, Japan)
P3-Pol05 The Effect of Repairing Methods on Reinforcing Fractured Denture Base Resin.  
*Park DR1), Bae JM1), Oh HJ2), Oh SH1)  
(1Dept. of Dental Biomaterials, Wonkwang Univ, Iksan, Korea, 2Korean Food & Drug Administration, Chungbuk, Korea)

P3-Pol06 The Effect of Aramid Fiber Orientation on the Mechanical Properties of Denture Base Resin.  
*Yu SH, Oh SH, Bae JM  
(Dpt. of Dental Biomaterials, Wonkwang Univ., Iksan, Korea)

P3-Pol07 Cell Viability and Tissues Response of DNA/Protamine Complexes with Different DNA Length.  
*Mori N1), Shinozaki Y1), Ohno J1), Hayakawa T2), Mitarai M3), Sakagami R1)  
(1Fukuoka Dental College, Fukuoka, Japan, 2Tsurumi Univ., Yokohama, Japan, 3Maruha-Nichiro, Tsukuba, Japan)

P3-Pol08 Annealing Effect on the Mechanical Behaviour of PLA/TCP Composite.  
*Kim DA, Kim GR, Kim NS, Kim HH, Lee HH  
(Dankook Univ., Cheonan, Korea)

P3-Pol09 Mineralization of Biopolymer Scaffolds and Culturing of Bone Marrow Mesenchymal Stem Cells.  
*Oh SA1), Shin US1), Kim HW1), Kim JH1)  
(1Department of Nanobiomedical Science & WCU Research Center, Cheonan, Korea, 2Institute of Tissue Regeneration Engineering, Cheonan, Korea, 3Dankook Univ., Cheonan, Korea)

P3-Pol10 Depth of Cure of Resin Composite Cured by Light through a Translucent Fiber Post.  
*Urapepon S1), Ekgasit S2)  
(1Mahidol Univ., 2Chulalongkorn Univ., Bangkok, Thailand)

P3-Pol11 Mechanical Properties of a New Hybrid Hard Resin for Crowns and Bridges.  
*Izumida A, Ishibashi M, Inagaki R, Okuyama Y, Yoda M  
(Tohoku Univ., Sendai, Japan)

P3-Pol12 Demineralization Resistance and Shear Bonding Strength of Light-cured Glass Ionomer Cement after the Addition of Nano Beta-Tricalcium Phosphate in Various Ratio.  
*Kim J1), Kim HO2), Lee YK1), Choi HJ1)  
(1Pediatric Dentistry, Yonsei Univ. Dental Hospital, Seoul, Korea, 2Graduate School, Yonsei Univ., Seoul, Korea, 3College of Dentistry, Yonsei Univ., Seoul, Korea)

P3-Pol13 Radio-opacity and Sensitivity to Ambient Light Test of Polymer-based Restorative Materials.  
*Kim KM1), Kim MJ1), Lee YK1), Roulet JF2), Kim KN1)  
(1Department and Research Institute of Dental Biomaterials & Bioengineering, Research Center for Orofacial Hard tissue Regeneration, Yonsei Univ., Seoul, Korea, 2Ivoclar-Vivadent Co., Lichtenstein)

P3-Pol14 Effects of Resin Cements on Hardness, Thickness and Bond Strength with Titanium Post: An Intraradicular Assessment.  
*Reza F, Peng LS  
(University Sains Malaysia, Kubang Kerian, Malaysia)

P3-Pol15 Shear Bond Strength of Each Layer of Artificial Teeth to Denture Base Resin.  
*Chun JN1), Ha JY1), Kwon TY1), Kim KH2)  
(1Department of Medical & Biological Engineering, Graduate School, Kyungpook National Univ., Daegu, Korea, 2Department of Dental Biomaterials, School of Dentistry, Kyungpook National Univ., Daegu, Korea)

Tsunooka M, Fukushima S, *Usuki D, Kamohara H, Sakuma T  
(GC Corporation, Tokyo, Japan)
*Ueda N1), Miyazawa K1), Muraji N2), Masuda T1), Hida M1), Hata Y1), Mieki A3), Kataoka H3), Kawai T1), Tanaka Y2), Goto S1)
(1Department of Orthodontics, 2Department of removable Prosthodontics and 3Department of Dental Materials Science, School of Dentistry Aichi Gakuin Univ., Nagoya, Japan)

P3-Pol18 Tubular Calcium Phosphate Nanomaterials as a Drug Carrier for Bone and Tooth Repair.
*Kim JJ1,2), Kim MK1,2), Lee HY1,2), Shin US1,2), Lee HH1,3), Kim HW1,2,3)
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

P3-Pol19 Novel Approach to Produce Nanofibrous Membranes of Biopolymers.
*Lee HY1,2), Bang SH1,2), Dashnyam K1,2), Kim TH1,2), Shin US1,2), Lee HH1,3), Kim HW1,2,3)
(1Department of Nanobiomedical Science & WCU Research Center, 2Institute of Tissue Regeneration Engineering, 3Department of Biomaterials Science School of Dentistry, Dankook Univ., Cheonan, Korea)

P3-Pol20 Surface Modification of PMMA by LEB Irradiation.
*Ito K1), Okawa S1), Kanatani M1), Yamaga Y1), Kaneko H1), Nomura A2), Nomura S1), Watanabe K1)
(1Niigata Univ., Niigata, Japan, 2Meirin College, Niigata, Japan)

P3-Pol21 Application of a Noble Metal Cluster for the Denture Base Resin.
*Aoyagi Y, Miyasaka T, Ando N, Nakayama M
(Nippon Dental Univ., Tokyo, Japan)

P3-Pol22 Effect of Nano Silver Acrylic Resin against Adhesion of Candida Albicans.
*Prunkngarmpun C, Vongpetch R, Ingpanjalap S, Kunchoun S
(Faculty of Dentistry, Khon Kaen Univ., Khon Kaen, Thailand)

P3-Pol23 Flexure Strengths of Acrylic Denture Resins Measured by Ring-on-Ring Biaxial Test.
*Kim GR1), Lee CJ2), Kim DA1), Lee HH1)
(1Dankook Univ., Cheonan, Korea, 2Shinheung College, Uijeongbu, Korea)

*Kasuga Y1), Takahashi H2), Inoue M1), Hoshino Y1), Minakuchi S1), Nakajima H3)
(1Complete Denture Prosthodontics, Tokyo Medical & Dental Univ., Tokyo, Japan, 2Advanced Biomaterials, Tokyo Medical & Dental Univ., Tokyo, Japan, 3Dental Biomaterials Science, Meikai Univ., Sakado, Japan)

P3-Pol25 Assessment of Evolution of Resistance to Antibacterial Agents and an Antibacterial Monomer MDPB in Oral Bacteria.
*Kitagawa H1), Izutani N1), Imazato S2), Yoshikawa R1), Ebisu S3)
(1Department of Restorative Dentistry and Endodontology, 2Department of Biomaterials Science, Osaka Univ., Suita, Japan)

P3-Pol26 Flexural Properties of Thermo-polymerized PMMA/Ethylene Glycol Dimethacrylates Pastes.
*Tanaka J1), Stansbury JW2), Antonucci JM3), Suzuki K1)
(1Okayama Univ., Okayama, Japan, 2University of Colorado, Aurora, USA, 3NIST, Gaithersburg, USA)

P3-Pol27 Dimensional Stability and Tensile Strength of the New Vinyl Polysiloxane Impression Material for Home-visit Dental Care.
*Aoyagi Y1), Umemoto K1), Takahashi H2), Iwasaki N2), Tanaka M3)
(1Kanagawa Dental College, Yokosuka, Japan, 2Tokyo Medical and Dental Univ., Tokyo, Japan, 3Osaka Dental Univ., Hirakata, Japan)
P3-Pol28 Bond Strength and Viscoelasticity of MMA-based and Silicone-based Denture Liners.  
*Iwasaki N, Kasuga Y, Takahashi H, Minakuchi S, Suzuki T  
(Tokyo Medical and Dental Univ., Tokyo, Japan)

P3-Pol29 Effect of Buff Polishing on the Fundamental Properties of Commercial Thermoplastic Resins.  
*Yamaguchi N, Yamaguchi M, Manabe A, Tamaki Y, Miyazaki T  
(School of Dentistry, Showa Univ., Tokyo, Japan)